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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/025,143	02/18/1998	MARK W. BURKE	9318-0004	9234

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EXAMINER

LAO, SUE X

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 08/11/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/025,143

Applicant(s)
Burke

Examiner
S. Lao

Art Unit
2126



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jul 30, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16, 19, 21, and 22 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 21 is/are allowed.
- 6) ☒ Claim(s) 16 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

DETAILED ACTION

1. Claims 16, 19, 21, 22 are pending. This action is in response to the amendment filed 7/30/2003 (amendment D).

2. In the amendment filed 7/30/2003 (amendment D), there are limitations which are amended but not identified by underlying/striking through. For example, claim 16, lines 5-7, recite:

before amendment D: "an object factory for *instantiating objects encapsulating said object interface information* without translating the object definition information, said objects having *predefined interfaces defined in CORBA IDL;*" (see amendment filed 9/27/2002);

by amendment D: "an object factory for *instantiating object encapsulating said objects encapsulating said object interface information* without translating the object definition information, said objects having *predefined interfaces in CORBA IDL;*".

The two limitations identified above appear to be amended, but such changes are not identified in amendment D. Applicant is required to review and to identify each and every amended features in each and every pending claims.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites "instantiating object encapsulating said objects encapsulating said object interface information" in lines 5-6, which appears to be "instantiating objects encapsulating said object interface information", as best understood.

Claim 16 recites "said object interface information" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim. For the purpose of art rejection, it is

interpreted as "said object definition information", as best understood and as it appears to be.

Claim 16 recites "predefined interfaces in CORBA IDL" in line 7, which appears to be "predefined interfaces defined in CORBA IDL", as best understood considering claim 16 before amendment D.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Foody et al (US Pat. 5,732,270)

As to claim 22, Foody teaches (col. 6, line 60 - col. 7, line 15; fig.s 1, 2, 7c, 8, 10, 11) constructing an object invocation (construct method call for real object, fig. 7c), instantiating an object collection of objects corresponding to rules specifying the syntax of said object invocation (Type Description Framework 3, Object Exporting Framework 7, col. 9, lines 5-27), receiving information of the content of the object invocation (receive original call, fig. 7c), interrogating the object collection (traverse VFunctionData) with the information to determine one or more within the object collection required to construct the invocation (construct method call for the real object using Type Description Framework 3 and Forwarding Engines Framework 4). Additionally see col. 13, line 8 - col. 14, line 12; col. 16, line 9 - col. 18, line 6.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Purtilo et al ("Module Reuse by Interface Adaption") in view of Gamma et al (Design Patterns: Elements of Reusable Object-oriented Software, pp. 87-96, 139-150).

As to claim 22, Purtilo teaches a method of constructing (coerce interface structure/patterns) an object invocation (procedure/function call), including steps of

generating (create map) an object collection of objects (generate adaptors / library of coercion modules) corresponding to rules (Nimble map showing correspondence) specifying the syntax of the object invocation (syntactically/semantically equivalent interface parameters),

receiving information of the content of the object invocation (procedure/function call),

interrogating the collection of objects with the information to determine (binding of a call goes through the translator, fig. 5) (or nimble map directly interpreted at run-time, fig. 6 and denoting text) one or more objects within the object collection (coercion modules of the map) required to construct the invocation (rearrange parameters of an interface pattern at the point of procedure/function call). See page 544, line 1 - page 549, 1st para.

Purtilo does not teach that the objects/adaptors/coercion modules are implemented with object-oriented objects, nor the step of generating being implemented by instantiating.

This, however, would have been an obvious choice, and additionally taught by Gamma (adaptor pattern) who implements every software modules of an adapting system (client, target, adaptee, adaptor) in an object-oriented fashion. Therefore, it would have been obvious to implement adaptors and other software modules of Purtilo with object-oriented objects. In the combined teaching, the step of generating would have been implemented by instantiating in object orientation.

The motivations to combine the teachings of Purtilo and Gamma include the following. Purtilo desires reusing the adaptors / coercion modules (page 551, lines 31-39) but does not provide a mechanism to do so. Gamma teaches a mechanism to reuse adaptor (implement an adaptor with object-oriented adaptor pattern). [It is noted that one of the most well known benefits of object orientation is module reuse.] Therefore, one of

ordinary skill in the art would have been motivated to use the mechanism as taught by Gamma to provide reuse of adaptor modules in Purtilo.

7. Claims 19 and 21 are allowed.

8. Applicant's arguments filed 7/30/2003 have been considered but are moot in view of the new ground(s) of rejection. Applicant amended claims have added limitations not previously recited, thus, requiring a new grounds of rejection.

The amended interrogating step is met by the operations of the map based translator or interpreter of Purtilo. The amended interrogating step is also met by Foody (traversing). See sections 6 and 5, respectively.

Applicant argued, regarding claim 22, that Purtilo by itself or in combination with Gamma fails to teach (1) interrogating step because Purtilo merely provides a declarative language that allows for parameters to be rearranged and transformed to match formal parameters for an interface, (2) instantiating an object collection based upon the syntax of an object invocation. (Remarks, paragraph bridging pages 8 and 9).

The examiner respectfully disagrees. As to (1), contrary to applicant's characterization, Purtilo provides both compile time and run-time support for implementing the declarative language. See Purtilo, entire article. The coercion modules of Purtilo specify the rules for adapting one invocation syntax to another, therefore, meeting the rules specifying the syntax of an invocation as claimed. Interrogating / parsing such rules is taught by the Nimble map based translator and the interpreter of Purtilo. It is noted that parsing the language rules/grammar is an integral part of any translator/interpreter of that language.

As to (2), the argued instantiating an object collection *based upon the syntax* of an object invocation is not claimed. See claim 22, which requires instantiating a collection of objects *corresponding to the rules specifying the syntax* of an object invocation. The coercion modules / adaptors of Purtilo correspond to the rules specifying the syntax of the target invocation (see disclosure of Nimble map in Purtilo). Such coercion modules are

generated by the system's map creation function. Implementing the adaptors / coercion modules with object-oriented objects, and generating by instantiating are met by Gamma. See discussion of claim 22 for detail.

Applicant also argued the motivation to combine Purtilo and Gamma. (Remarks, page 8, 2nd paragraph).

The examiner's response is that a motivation to combine based on the respective teachings of Purtilo and Gamma is as follows: "The motivations to combine the teachings of Purtilo and Gamma include the following. Purtilo desires reusing the adaptors / coercion modules (page 551, lines 31-39) but does not provide a mechanism to do so. Gamma teaches a mechanism to reuse adaptor modules (implement an adaptor with the object-oriented adaptor pattern). It is noted that one of the well known benefits of object orientation is module reuse. Therefore, one of ordinary skill in the art would have been motivated to use the mechanism as taught by Gamma to provide reuse of adaptor modules in Purtilo." (See section 6 above).

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Lao whose telephone number is (703) 305-9657. A voice mail service is also available at this number. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 746-7238 for After Final communications, (703) 746-7239 for Official communications and (703) 746-7240 for Non-Official/Draft communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Sue Lao

August 7, 2003

A handwritten signature in cursive script that reads "Sue Lao".